

REMARKS

Reconsideration of the pending application is respectfully requested on the basis of the following particulars.

1. Interview of April 9, 2009

The applicants are appreciative of the opportunity to discuss the pending application with the Examiner Comley and Supervisor Kramer on April 9, 2009.

During the interview, the subject matter of pending claims 1-6 were discussed, with particular emphasis on the features of claims 1 and 3. Additionally, the remarks filed on March 23, 2009 with regard to the rejections of claims 1 and 3 in view of U.S. patent no. 4,708,599 (*Suzuki*), U.K. publication GB 2 133 585 (*Ott*), and U.S. patent no. 4,406,589 (*Tsuchida et al.*) were discussed.

Examiner Comley and Supervisor Kramer indicated that an amendment to claim 1 to recite that the first cylinder chamber, on a first side of the piston facing away from the inlet valve, is connected to a part of the rotor chamber located near the inlet valve upstream the rotor chamber via a first pipe, wherein the connection is always open would be sufficient to overcome the rejection of claim 1 in view of the *Suzuki* patent and the *Ott* publication.

Examiner Comley and Supervisor Kramer also agreed that the rejection of claim 3 in view of the *Suzuki* patent, the *Ott* publication, and the *Tsuchida* patent appeared to be an improper combination, since the proposed combination would create a non-functioning open loop structure.

In view of the helpful suggestions from Examiner Comley and Supervisor Kramer, claim 1 is amended as discussed below.

2. In the claims

As shown in the foregoing LIST OF CURRENT CLAIMS, the claims have been amended to more clearly point out the subject matter for which protection is sought.

Claim 1 is amended to clarify the position of the open connection as being upstream of the rotor chamber. It is respectfully submitted that no new matter is added by way of the amendment, since support for the change can be found, for example, at least in Figs. 1-4 of the application as originally filed.

Claims 2-6 are left unchanged.

Entry of the LIST OF CURRENT CLAIMS is respectfully requested in the next Office communication.

3. Rejection of claims 1, 2, 4, and 6 under 35 U.S.C. § 103(a) as being unpatentable over U.S. patent no. 4,708,599 (*Suzuki*) in view of U.K. publication no. GB 2,133,585 (*Ott*)

Reconsideration of this rejection is respectfully requested, on the basis that the proposed combination of the *Suzuki* patent and the *Ott* publication fails to disclose each and every recited feature of amended claim 1, and thus, the rejection fails to establish a *prima facie* case of obviousness with respect to amended claim 1. The remaining claims 2, 4, and 6 depend from claim 1, and are therefore patentable as containing all of the recited elements of claim 1, as well as for their respective recited features.

By way of review, the embodiment of amended claim 1 requires a compressor, containing a compressor element, and having a rotor chamber connected to an inlet pipe and an outlet pipe. A reservoir is in communication with the outlet pipe. A pressure regulating system includes an inlet valve associated with the inlet pipe. A double-acting piston is connected to the inlet valve and is movable in a cylinder to open and close the inlet valve without the use of a spring acting on the piston.

A bridge bridging the inlet valve includes between the inlet pipe and the rotor chamber a successively mounted gas stream limiter and a non-return valve which only admits gas into the rotor chamber.

A gas pipe connects the reservoir to a part of the bridge situated between the gas stream limiter and the non-return valve. A relief valve is associated with the gas pipe.

The double acting piston divides the cylinder into first and second closed cylinder chambers. The first cylinder chamber, on a first side of the piston facing away from the inlet valve, is connected to a part of the rotor chamber located near the inlet valve upstream the rotor chamber via a first pipe, wherein the connection is always open.

On a second side of the piston, the second cylinder chamber is connected to a part of the rotor chamber situated near the inlet valve and to the non-return valve via a second pipe.

With the above described configuration, the bridge bridging the inlet valve, in combination with the relief valve, helps to control the piston connected to the inlet valve, which thus allows the use of an inexpensive electromagnetic control valve with a small passage to control the relief valve (specification page 9, line 20 through page 10, line 24; page 11, lines 1-11; page 12, lines 11-16).

The comments presented in the response filed on March 23, 2009 are incorporated herein by reference.

Turning to the *Suzuki* patent, it is respectfully submitted that the *Suzuki* patent fails to disclose every feature of amended claim 1. In particular, the *Suzuki* patent fails to disclose the working chamber section, on the side of the piston facing away from the inlet valve, connected to a part of the rotor chamber located near the inlet valve upstream the rotor chamber, wherein the connection is always open, as is required by amended claim 1.

The features of the *Suzuki* patent are discussed in detail in the response filed on March 23, 2009. In particular, as can be seen in Figs. 1 and 2 of the *Suzuki* patent, the working chamber section 9Fb, on the side of the piston 9E facing away from the inlet valve, communicates via the opening 9Ab with the discharge line section 1Ba through a valve closing line 13 and a second three-way solenoid valve 14 and the operation line 12. Since there is a three-way solenoid valve in this circuit that selectively closes the negative pressure communication line 16, the working chamber section 9Fb is not connected to a part of the rotor chamber located near the inlet valve

upstream the rotor chamber, wherein the connection is always open, as is required by amended claim 1 (Figs. 1-2; col. 3, line 1 through col. 4, line 19).

On page 5, the Office action identifies pipe 15 as connecting to one of the chambers of the rotor chamber, however, while exhaust gas line 15 may be an always open connection, the exhaust gas line 15 is connected to the cooler 4 in the discharge line 1B at the discharge end of the compressor 1 (Figs. 1-2), and not near the inlet valve upstream the rotor chamber, as is required by amended claim 1.

Furthermore, as acknowledged on page 5 of the Office action, the *Suzuki* patent fails to disclose a bridge bridging the inlet valve, as is required by amended claim 1.

The Office action turns to the *Ott* publication to teach a “bridge.” However, as discussed in detail in the response filed on June 12, 2008, the *Ott* publication fails to disclose a bridge bridging the inlet valve including between the inlet pipe and the rotor chamber a successively mounted gas stream limiter and a non-return valve which only admits gas into the rotor chamber, as is required by amended claim 1. The *Ott* publication also fails to disclose the always open connection between a first cylinder chamber and the rotor chamber, as is required by amended claim 1.

Since the *Ott* publication does not disclose an always open connection between the first cylinder chamber and the rotor chamber, the *Ott* publication cannot be relied upon to cure the deficiencies of the *Suzuki* patent, which also fails to disclose an always open connection between the first cylinder chamber and the rotor chamber, as is required by amended claim 1.

Thus, the proposed combination of the *Suzuki* patent and the *Ott* publication fails to disclose an always open connection between the first cylinder chamber and the rotor chamber, as is required by amended claim 1, and a *prima facie* case of obviousness cannot be established with respect to amended claim 1.

As mentioned above, applicants submit that independent claim 1 is patentable and therefore, claims 2, 4, and 6, which depend from claim 1, are also considered to

be patentable as containing all of the elements of claim 1, as well as for their respective recited features.

4. Rejection of claim 3 under 35 U.S.C. § 103(a) as being unpatentable over U.S. patent no. 4,708,599 (*Suzuki*) in view of U.K. publication no. GB 2,133,585 (*Ott*) and further in view of U.S. patent no. 4,406,589 (*Tsuchida et al.*)

Reconsideration of this rejection is respectfully requested on the basis that the *Tsuchida* patent fails to provide for the deficiencies of the proposed combination of the *Suzuki* patent and the *Ott* publication, as discussed above with respect to amended claim 1, from which claim 3 depends.

Further, while the *Tsuchida* patent discloses relief passages 46A, 46B along the axial direction of the check valve 35 and the main valve 36, the relief passages 46A, 46B do not extend over the entire length of the stem (Figs. 2A and 2B), as is required by claim 3.

Further still, if the relief passages 46A, 46B of the *Tsuchida* patent were added to extend along the entire length of the stem (rods 9C, 9D) of the *Suzuki* patent, the exhaust gas line 15 would always be in direct communication with the suction valve 2, thus creating an open circuit between the exhaust gas line at the discharge line 1B and the suction valve at the suction line 1A of the *Suzuki* patent. Such a combination would destroy the function of the *Suzuki* patent, and thus a person having ordinary skill in the art would not have made such a combination.

Therefore, the proposed combination of the *Tsuchida* patent with the *Suzuki* patent and the *Ott* publication fails to disclose every feature of claim 3, and a person having ordinary skill in the art would not have made such a combination. Thus, a *prima facie* case of obviousness cannot be established, and withdrawal of this rejection is respectfully requested.

Accordingly, withdrawal of this rejection is respectfully requested.

5. Rejection of claim 5 under 35 U.S.C. § 103(a) as being unpatentable over U.S. patent no. 4,708,599 (*Suzuki*) in view of U.K. publication no. GB 2,133,585 (*Ott*) and further in view of Belgium Patent BE 1,012,655 (*Coppens*)

Reconsideration of this rejection is respectfully requested on the basis that the *Coppens* patent fails to provide for the deficiencies of the proposed combination of the and *Suzuki* patent and the *Ott* publication, as discussed above with respect to amended claim 1, from which claim 5 depends.

Accordingly, withdrawal of this rejection is respectfully requested.

6. Conclusion

As a result of the amendment to the claims, and further in view of the foregoing remarks, it is respectfully submitted that the application is in condition for allowance. Accordingly, it is respectfully requested that every pending claim in the present application be allowed and the application be passed to issue.

If any issues remain that may be resolved by a telephone or facsimile communication with the applicants' attorney, the examiner is invited to contact the undersigned at the numbers shown below.

BACON & THOMAS, PLLC  
625 Slaters Lane, Fourth Floor  
Alexandria, Virginia 22314-1176  
Phone: (703) 683-0500  
Facsimile: (703) 683-1080

Date: April 21, 2009

Respectfully submitted,  
/Patrick M. Buechner, Reg. #57,504/  
  
PATRICK M. BUECHNER  
Attorney for Applicants  
Registration No. 57,504